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Weekly Safety Meeting

Trenching and Excavation Safety

Employers must provide a workplace free of recognized hazards that may cause serious injury or death, but unfortunately every month workers are killed in trench collapses.

An **excavation** is any man-made cut, cavity, trench, or depression in an earth surface formed by earth removal.

Trench (Trench excavation) means a narrow excavation (in relation to its length) made below the surface of the ground. In general, the depth is greater than the width, but the width of a trench (measured at the bottom) is not greater than 15 feet.

What are the Dangers of Trenching and Excavations?

The greatest risk, that is much more likely than any other excavation-related accident resulting in worker fatalities, is cave-ins. You see, soil is very heavy. One cubic yard of soil can weigh as much as a car!

Falls, falling loads, hazardous atmospheres, and incidents involving mobile equipment are just some of the other potential hazards.

Basically, an unprotected trench is an early grave! Simply do not enter an unprotected trench.

Trench Safety Measures

A protective system is required when trenches are 5 feet deep or greater unless the excavation is made entirely in stable rock.

If the excavation is fewer than 5 feet deep, a competent person may determine that a protective system is not required.

A registered professional engineer must design a protective system when trenches are 20 feet deep or greater. A registered professional engineer must prepare and/or approved the design of the protective system based on tabulated data.

Competent Person

OSHA standards require that employers have a competent person inspect trenches daily, and as conditions change, before worker entry to ensure elimination of excavation hazards. A competent person is an individual who can identify existing and predictable hazards or working conditions that are hazardous, unsanitary, or dangerous to workers, soil types and protective systems required, and who is authorized to take prompt corrective measures to eliminate these hazards and conditions.

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Access and Egress

OSHA standards require safe access and egress to all excavations, including ladders, steps, ramps, or other safe means of exit for employees working in trench excavations 4 feet or deeper. These devices must be located within 25 feet of all workers.

General Trenching and Excavation Rules

- Keep heavy equipment away from trench edges.
- Identify other sources that might affect trench stability.
- Keep excavated soil (spoils) and other materials at least 2 feet (0.6 meters) from trench edges.
- Know where underground utilities are located before digging.
- Test for atmospheric hazards such as low oxygen, hazardous fumes, and toxic gases when greater than 4 feet deep.
- Inspect trenches at the start of each shift.
- Inspect trenches following a rainstorm or other water intrusion.
- Do not work under suspended or raised loads and materials.
- Inspect trenches after any occurrence that could have changed conditions in the trench.
- Ensure that personnel wear high visibility or other suitable clothing when exposed to vehicular traffic.

Protective Systems

There are different types of protective systems.

Benching – is a method of protecting workers from cave-ins by excavating the sides of an excavation to form one or a series of horizontal levels or steps, usually with vertical or near vertical surfaces between levels. Benching cannot be done in Type C soil.

Sloping - involves cutting back the trench wall at an angle inclined away from the excavation.

Shoring - requires installing aluminum, hydraulic, or other types of supports to prevent soil movement and cave-ins.

Shielding - protects workers by using trench boxes or other types of supports to prevent soil cave-ins. Designing a protective system can be complex because you must consider many factors: soil classification, depth of cut, water content of soil, changes caused by weather or climate, surcharge loads (e.g., spoil, other materials to be used in the trench) and other operations in the vicinity.

Remember you are the one going into the hole, so check the methods being used to protect the excavation. Prior to climbing down the ladder, check the spoil pile location and equipment that is near the excavation. Do you feel comfortable with the excavation, its protection, and the nearby surroundings?

SOIL IS HEAVY AND IT CAN BE VERY DANGEROUS!

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Safety Meeting Sign-In Sheet

Supervisor:	Subject:
Location:	Date:
Conducted By:	Trainer Signature:

Name (print clearly)	Signature	Comments / Safety Concerns / Training Requests

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